degrees of freedom for designing.

Needless to say, these merits are maintained generally if a surface light source device improved in accordance with the present invention is applied to an arrangement for illuminating a LCD panel of a liquid crystal display. That is, a bright and clear display screen is provided. And the surface light source device as a part of the LCD allows to be designed without difficulty.

What is claimed is:

1. A light guide plate comprising:

two major faces to provide an emission face and a back face;and

an incidence end face for introducing light,

wherein said back face is provided with a great number of projection-like micro-reflectors for direction-conversion of light, each of which has a guiding portion and a conversion output portion that includes a ridge portion and a pair of first and second reflection surfaces formed on both sides of the ridge portion respectively as to be inclined with respect to a general plane representative of said back face,

said ridge portion and said first and second reflection surfaces forming a valley in each of said micro-reflectors,

said valley getting narrower and shallower as being distant from the guiding portion so that an inner input light reaching the valley via the guiding portion is reflected by one of the first and second reflection surfaces and is further reflected by the other of the first and second reflection surfaces as to produce an inner output light having a main propagation direction that is inclined with respect to a frontal direction in a plane perpendicular to said incidence end face so as to get remote from said incidence end face.

2. A light guide plate as defined in claim 1, wherein said first and second reflection surfaces are different from each other in inclination angle with respect to said general plane representative of said back face.

3. A light guide plate as defined in claim 1, wherein said ridge extends in a direction according to a direction distribution that depends on position on said back face.

4. A light guide plate as defined in claim 1, 2 or 3, wherein said emission face is provided with a great number of projection rows running approximately at right angles with respect to said incidence end face,

said projection rows have an inner reflection function which controls a direct escaping of the inner output light from said emission face.

5. A surface light source device comprising:

at least one primary light source;

a light guide plate having two major faces to provide an emission face, a back face and an incidence end face for introducing light supplied by said primary light source; and

a direction modifying member disposed along said emission face,

wherein said back face is provided with a great number of projection-like micro-reflectors for direction-conversion of light, each of which has a guiding portion and a conversion output portion that includes a ridge portion and a pair of first and second reflection surfaces formed on both sides of the ridge portion respectively as to be inclined with respect to a general plane representative of said back face,

said ridge portion and said first and second reflection surfaces forming a valley in each of said micro-reflectors,

said valley getting narrower and shallower as being distant from the guiding portion so that an inner input light reaching the valley via the guiding portion is reflected by one of the first and second reflection surfaces and is further reflected by the other of the first and second reflection surfaces as to produce an inner output light having a main propagation direction that

is inclined with respect to a frontal direction in a plane perpendicular to said incidence end face so as to get remote from said incidence end face, and

said direction modifying member receives the inner output light emitted from said emission face as an input and provides an output light that is approximately directed to the frontal direction in a plane perpendicular to said incidence end face.

6. A surface light source device as defined in claim 5, wherein said first and second reflection surfaces are different from each other in inclination angle with respect to said general plane representative of said back face.

7. A surface light source device as defined in claim 5, wherein said ridge extends in a direction which varies depending on position on said back face as to approximately accord with a light coming direction.

8. A surface light source device as defined in claim 5, wherein said ridge extends in a direction which varies depending on position on said back face as to be inclined at a small angle with respect to a light coming direction.

9. A surface light source device as defined in claim 5, 6, 7 or 8, wherein said emission face is provided with a great number of projection rows running approximately at right angles with respect to said incidence end face,

said projection rows have an inner reflection function which controls a direct escaping of the inner out put from said emission face.

10. A surface light source device as defined in claim 5, 6, 7, 8 or 9, wherein a reflection member is disposed along said back face.

11. A liquid crystal comprising:

a liquid crystal display panel; and

a surface light source device for illuminating said liquid crystal display panel, said surface light source device having at least one primary light source, a light guide plate having two major faces to provide an emission face, a back face and an incidence end face for introducing light supplied by said primary light source and a direction modifying member disposed along said emission face,

wherein said back face is provided with a great number of projection-like micro-reflectors for direction-conversion of light, each of which has a guiding portion and a conversion output portion that includes a ridge portion and a pair of first and second reflection surfaces formed on both sides of the ridge portion respectively as to be inclined with respect to a general plane representative of said back face,

said ridge portion and said first and second reflection surfaces forming a valley in each of said micro-reflectors,

said valley getting narrower and shallower as being distant from the guiding portion so that an inner input light reaching the valley via the guiding portion is reflected by one of the first and second reflection surfaces and is further reflected by the other of the first and second reflection surfaces as to produce an inner output light having a main propagation direction that is inclined with respect to a frontal direction in a plane perpendicular to said incidence end face so as to get remote from said incidence end face, and

said direction modifying member receives the inner output light emitted from said emission face as an input and provides an output light that is approximately directed to the frontal direction in a plane perpendicular to said incidence end face.

12. A liquid crystal display as defined in claim 11, wherein said first and second reflection surfaces are different from each other in inclination angle with respect to said general plane representative of said back face.

13. A liquid crystal display as defined in claim 11, wherein said ridge extends in a direction which varies depending on position on said back face as to approximately accord with a light coming direction.

14. A liquid crystal display as defined in claim 5, wherein said ridge extends in a direction which varies depending on position on said back face as to be inclined at a small angle with respect to a light coming direction.

15. A liquid crystal display device as defined in claim 11, 12, 13 or 14, wherein said emission face is provided with a great number of projection rows running approximately at right angles with respect to said incidence end face,

said projection rows have an inner reflection function which controls a direct escaping of the inner out put from said emission face.

16. A liquid crystal display as defined in claim 11, 12, 13, 14 or 15, wherein a reflection member is disposed along said back face.